Plan of Action form field definitions

- **Br No.** Caltrans Bridge Inventory Item number. *This Information provided by Caltrans on the form.*
- **Owner.** Name of agency who owns the Bridges. *Information provided by Caltrans on the form.*
- **Location.** Distance from nearest main road. Reference the most recent Caltrans Bridge Inspection Report (BIR) for this information. *Information provided by Caltrans on the form.*
- **Facility Carried**. Name the road the bridge carries. Reference the most recent Caltrans Bridge Inspection Report (BIR) for this information. *Information provided by Caltrans on the form.*
- **Name.** Name the creek/river that intersects the bridge**.** *Information provided by Caltrans on the form.*

- **Completed By.** Name of agency that is responsible for completing the Plan of Action.
- **Date.** Provide the date of when the Plan of Action form was completed.

1)

- **Scour Vulnerability Rating.** *Caltrans has completed a hydraulic evaluation and possibly a Structural and Geotechnical evaluation for all scour critical bridges. The evaluations should provide the details as to why the bridge is considered scour critical. Caltrans is not providing this information on the form, but this information is summarized on the Caltrans scour BIR. This BIR should also have a summary of the scour history. The scour history is taken from past routine BIR's. The history should also include any scour information the local agency may have knowledge of. If additional details regarding the scour rating and history are needed, contact your Area Bridge Maintenance Engineer or Charles Ineichen by e-mail at: charles_ineichen@dot.ca.gov.*
- **Scour Evaluation Summary.** Summarize why the bridge became/is scour critical and provide some details of the present hydraulic concerns at the bridge site.
- **Scour History.** Report any known history of scour problems, drift/debris problems at the bridge site, channel meandering, bank erosion, approach washout, or any channel degradation and mining operation in proximity to site, etc.

    - a) **Foundation type.** Identify the bridge foundation type. As-built plans are a good source as is any engineer who may have worked on the project.

    - b) **Foundation material.** Identify the foundation material. Foundation Reports and/or Log of Test Borings are a good source for this information. The county may also want to do a field visit to assess the ground material. This entry also can be left unknown.

- Scour review**.** Provide any known past hydraulic studies including the Caltrans evaluation and the date.
- Structural assessment**.** Provide any known past structural assessment studies in relation to the scour potential and the date done at the bridge site.
  Critical Elevation**.** If any study provides an elevation in which the bridge becomes unstable, provide that information**.**
- Geotechnical Assessment**.** Provide any known past geotechnical assessment studies and the date done at the bridge site.
  Critical Elevation**.** If any study provides an elevation in which the bridge foundation becomes unstable, provide that information**.**

2)

- **<u>NBIS Coding Information</u>.** *NBI data is taken from the most recent Caltrans BIR and is found on the Structure Inventory and Appraisal Sheet attached to all routine Caltrans BIR's. Information can also be referenced in the Federal Highway Administration Publication of "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges". Report No. FHWA-PD-96-001.*
  - Inspection Date**.** Reference latest routine Caltrans BIR**.** *Information provided by Caltrans on the form.*
  - Item 113 Scour**.** Bridge coding regarding its vulnerability to scour. *Information provided by Caltrans on the form.*
  - Item 60 Substructure**.** This item describes the physical condition of piers, abutments, piles, fenders, footings or other components. *Information provided by Caltrans on the form.*
  - Item 61 Channel and Channel Protection**.** This item describes the physical conditions associated with the flow of water through the bridge. *Information provided by Caltrans on the form.*
  - Item 71 Waterway Adequacy**.** This item appraises the waterway opening with respect to passage of flow through bridge. *Information provided by Caltrans on the form.*

3)

- **<u>Scour Countermeasure.</u>** *In accordance with guidelines from Hydraulic Engineering Circular 18 and 23 (HEC 18 and HEC 23) published by the Federal Highway Administration.*
- **A) Completed Scour Countermeasure.** Indicate and give details and dates of any recent scour countermeasure that has been implemented in regards to addressing the current scour critical status of the bridge. All applicable studies, lead agencies, subcontractors and as-builts should be noted.
- **B) Proposed Scour Countermeasures.**
  - **Countermeasures Not Required.** Indicate and provide details as to why no scour countermeasures are required at this time.
  - **Install Scour Countermeasures.** Indicate and provide details and dates including reference to any hydraulic, structural or geotechnical studies that

have been completed for the purpose of scour mitigation. Provide estimated cost to all proposed scour countermeasure for the bridge site
    - **Close Bridge.** Provide dates, details and detour**.**

4)

- **<u>Countermeasure Implementation Schedule</u>.**
    - Proposed Construction Project**.** Identifies the proposed project and identify the lead agency and all subcontractors, if any, involved in the proposal. An estimated date of completion should be given.
    - Maintenance Project**.** Identifies if project is in house.
    - Other scheduling information**.**

5)

- **<u>Monitoring Plan</u>.** *Monitoring is an option of providing scour countermeasure at a bridge site. It can be used as the scour mitigation proposal or as a supplement to a more permanent scour countermeasure. Monitoring a bridge for scour encompasses a large and varied amount of options. It can be as simple as inspecting the bridge for hydraulic damage on a regular interval and/or after a significant hydraulic event, or as complex as monitoring the bridge at different discharge levels using various monitoring devices. A monitoring plan could be the precipitous leading to Bridge Closure.*
  Monitoring, if used, should include provisions for:
    - **Monitoring Plan Summary.** Provide details of the extent of monitoring. What information the monitoring will provide. What action will be implemented if the information indicates a scour problem? If an engineering firm is contracted for the monitoring plan, provide the details.
    - **Monitoring Authority.** Identify responsible agency for implementation and action of monitoring. Indicate who is in charge of overseeing and carrying out the monitoring plan.
        - **Regular Inspection program.** Indicate the frequency of the monitoring and will cross sections and comparison of historical cross sections be required. Indicate the items to watch for.
        - **Increased Inspection Interval.** Indicate the need for and increased interval and items to watch for.
        - **Fixed Monitoring Devices.** Identify the type of instrument. This type of monitoring can be dependant on increasing channel flows and an identified discharge that could potential cause scour concerns. The monitoring or interval is usually increased as discharge increases. *Further information on monitoring devices can be found at the following website:*
          http://www.dot.ca.gov/hq/structur/strmaint/smi.htm *reference the Plan of Action Links.*
        - **Other Monitoring Program.** Identify any other methods of monitoring.

6)

- **Bridge Closure Plan.**
    - **Bridge ADT.** Can be found on the most recent routine Caltrans BIR on the Structure Inventory and Appraisal Sheet. *Information provided by Caltrans on the form.* The agencies should update as necessary.
    - **Built.** Identifies the year the bridge was built**.** Found in archived records or on the most recent Caltrans BIR's.
    - **% Trucks.** Found in research projects or on the most recent Caltrans BIR's. *Information provided by Caltrans on the form.* The agencies should update as necessary.
    - **Bridge Length.** Found in as-built plans or on the most recent Caltrans BIR's. *Information provided by Caltrans on the form.*

    - **Closure Plan Summary.** Provide summary of closure.

    - **Scour Monitoring Criteria for Considering Bridge Closure.** Should be filled out if monitoring is used in consideration for bridge closure.

    - **Person. Area Responsible for Closure**. Identify responsible person/position responsible for closure.

    - **Contact People.** Identify responsible person/position who will be in charge of the bridge during closure.

    - **Responsible for re-opening after inspection**. Identify responsible person/position responsible for re-opening the bridge**.**

7)

- **Detour Route.**
    - **Detour Route Description.** Provide a map with a viable detour in case of bridge closure/failure.
    - **Average ADT.** Provide average daily traffic on alternate route. Can be found in recent research studies or possible alternate bridges within route by referencing the most recent routine Caltrans BIR's
    - **%Trucks.** Provide average daily truck traffic on alternate route. Can be found in recent research studies or possible alternate bridges within the detour route by referencing the most recent routine Caltrans BIR's for the appropriate bridge.
    - **Length of Detour.** Provide length of detour in miles.

- **Bridges on Detour Route.** Provide a list of Bridges along the detour that are over water, the feature intersected, the Sufficiency Rating and load limitations and the bridges own 113 code.
    - Bridges Number**.** Caltrans Bridge Inventory Item number.
    - Waterway**.** Identify the waterway beneath the bridge.

- Sufficiency Rating**.** Found on the most routine Caltrans BIR on the Structure Inventory and Appraisal sheet.
- Load Rating. Found on the most recent routine Caltrans BIR.
- Scour 113 Code**.** Found on the most recent routine Caltrans BIR on the Structure Inventory and Appraisal sheet.